

Challenges to the Free Circulation of Scientists

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The universality of science, which entails the free circulation of scientists, the freedom to communicate among scientists and to disseminate scientific information, is the most important goal actively pursued by IUPAP, the International Union of Pure and Applied Physics.

During the past two decades, we have witnessed the fall of the ‘iron curtain’ that divided Europe, the opening of the borders of China and other countries, the development of international scientific collaborations, the growth of travel and exchange programs, and the growth of students studying abroad, and last not least, the introduction of the web by high energy physicists and the subsequent explosion of electronic communication. In the past, in times of crisis, communications among scientists have been highly beneficial to international relations, they have helped to reduce tensions rather than impede security. Unfortunately, in recent years, new conflicts have flared up around the world. With the opening of borders and communications, terrorist attacks and other threats to security have increased, and misuse of scientific and technical information has become a concern. This is particularly the case for the United States of America, Europe and also Japan. Measures, introduced to secure borders, have impacted foreigners who visit or seek temporary residence, in particular those with scientific or technical knowledge.

Various European countries have enhanced their border security and visa scrutiny and they have decided not to issue visa to some scientists from North Africa, the Middle East, and the Indian subcontinent, but these cases are few, and records are scarce. In Japan, 30% of the Indian scientists planning to visit and to work at national laboratories or universities have been denied visa in the past three years. Initially, interventions by KEK, the National High Energy Physics Laboratory in Tsukuba, had little impact. Then a concerted effort by leading scientists at KEK, the Japanese Physical Society, and the Japanese Science Council was successful. Host institutions introduced a Form of Guarantee for each visiting Indian scientist, and since April of 2005 all applications have been approved.

The remainder of this report focuses on student and exchange visa to the USA, but many of the procedures and thus problems are similar for other non-immigrant visa (for instance B visa) to the US. Information on other types of US visa and the situation in other countries is not readily available.

Because of the US role in international conflicts, since Sept. 11, 2001, enhanced security measures have been imposed to control US borders. Specifically, all visa applicants are interviewed in person at the consulates. Consular officers are personally liable for any action that might lead to infiltration of members of terrorist organizations, illegal immigrations, or the import or export of information that might lead to illegal technical developments, in particular weapons. For typically 2% of all applications, consular officers defer the decision and ask for security advisory from Washington. In total, the

US consulates process 700,000 applications for F (students) and J (exchange) visa per year. On average, 65% of the F and 85% of the J visa are approved, the approval rating being lowest for China, India and Russia. These new procedures have led to very long delays, partially due to lack of qualified personnel at the consulates, poor tracking of applications, and drawn out security checks by the FBI and other agencies. As a result a large backlog of applications built up in 2003.

Nationality	Students (F)		Exchange (J)	
	Total	Approved	Total	Approved
China and Taiwan	54,317	58%	17,174	59%
South Korea	42,816	81%	15,725	90%
India	38,293	53%	7,029	76%
Japan	27,349	95%	11,682	97%
Brazil	9,386	81%	8,817	94%
Germany	6,498	83%	23,523	96%
UK	4,410	80%	18,406	94%
Russia	2,970	55%	25,597	67%
Poland	2,149	58%	23,312	89%
All Others	175,586	59%	187,009	84%
Total	363,774	65%	338,274	84%

Figure 1: Statistics of applications for US student (F) and exchange (J) visa for the year 2003 (Data from GAO Report, February 2004).

Visa rules rely on reciprocity, i.e. the USA will grant visa to foreign nationals under the same rules as their country offers visa to US citizens. Thus, Chinese and Russians (F and J visa) only receive single entry visa, valid for six (China) or twelve (Russia) months. Consequently, these scientists have great difficulty continuing research at US laboratories or universities. Many students and post doctoral fellows refrain from leaving the USA for home visits or overseas conferences for fear that their return might be delayed for many months. Slow visa processing or even refusal might interrupt their studies or research.

Many of the world's best scientists were denied timely visa processing, many were discouraged to apply a second time, many were outraged. Applicants for B visa were also severely affected, many were unable to make short term visits, due to late application and long approval times. The denial of multi-entry B visa is the most significant impediment for the business people and senior scientists involved in international activities, attending conferences and workshops. Some meetings scheduled for the USA were relocated in Canada. IUPAP was examining whether we could continue to sponsor conferences in the USA, given that Chinese and Russian participation could not be guaranteed.

The principal reason for long visa processing times is the so-called Visa Mantis clearance. Students and scholars who study any of about 200 fields on the Technology Alert List are required to pass this security clearance. The consulates transfer the application to the FBI and other agencies in Washington, via the State Department.

	Applications '03-04	Admission '03-04	1st-Year Enroll. '03-04
U.S. Citizen	0%	-5%	-2%
International	-28%	-18%	-6%
China	-45%	-34%	-8%
India	-28%	-19%	-4%
Korea	-14%	-12%	-11%
Middle East	4%	0%	-2%

Figure 2: Change in graduate student applications, admission, and enrollment at US university and college applications from 2003 to 2004 (Data provided by the Council of Graduate Schools).

The average visa processing time grew to 90 days, the maximum exceeded a year. Scientists from Russia and China were most affected by this process. In the past, Visa Mantis was only valid for one visa or one year, thus had to be repeated for practically every visit! During the application, consulates kept the applicant's passport, thus preventing any other foreign travel. If the applicant requested to have the passport returned, the application was delayed, and in some cases declared void! There is little justification for this, and State Department officials have denied that this practice was in place.

For several years, most of the US public and administration did not pay much attention! Numerous appeals to the US government and members of Congress by laboratory directors and university presidents, the US National Academy of Sciences, the presidents of IUPAP and ICSU received sympathy, but little action until the impact of the visa restrictions on the universities and the research community became apparent. The General Accounting Office (GAO) investigated the situation and found great inefficiencies in visa processing.

In May 2004, presidents of 25 US organizations of higher education, science and engineering jointly issued a set of recommendations that were targeted to improve the visa system and thereby enable the most qualified students, scholars, and scientists to participate in the higher educations and research. Specifically they recommended that the validity of Visa Mantis security clearances be extended, that the visa renewal process be improved, and that the visa reciprocity agreements be revised. Some of these

recommendations regarding the processing were identical to those in a report by the GAO, issued in May 2004.

During the summer 2004, the visa applications process was streamlined, and the backlog of more than 2,500 cases was gradually reduced to less than two hundred. The average time to obtain Visa Mantis clearance was reduced from 80 days to about 15 days. In other words, in 2003 only 45% of all Visa Mantis cases were processed in 30 days, and 23% took more than 120 days, now 92% of all cases are cleared in less than 30 days, and only 1% extend to more than 120 days. Similarly, waiting and processing times at most consulates were reduced. Applicants for F and J visa now get priority.

Since February 2005, international students (F Visa) can obtain Visa Mantis clearance for a maximum of four years, and exchange visitors (J Visa) obtain clearance for a maximum of two years. Thus, if an applicant intends to return to the previous study or work program in the United States, a new Visa Mantis clearance is not required.

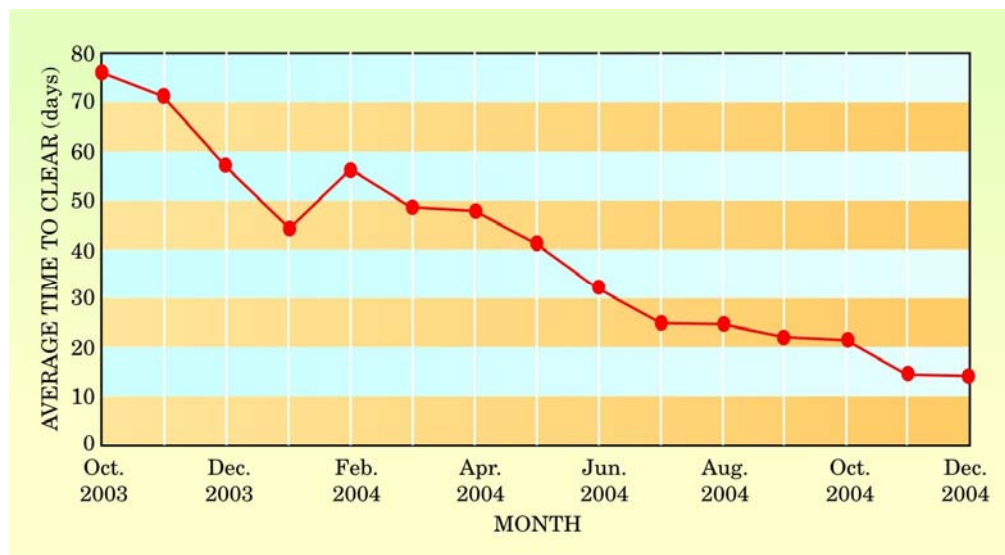


Figure 3: Average time to clear Visa Mantis (A. Flatten in Physics Today, 02/ 2005)

In May 2005, US organizations of higher education, science and engineering, issued a 2nd statement recommending the development of a national strategy to promote scientific exchange and encourage foreign students to study in the USA. Specifically, they requested that the validity of Visa Mantis security clearances be extended for the full duration of academic appointment, that students and scholars can renew their visa in the USA rather than in their country of citizenship, that the visa reciprocity agreements between USA and key countries, like China and Russia, be renegotiated to extend visa duration and allow multiple entries, to amend requirements for students and young scientists and stress intent and financial means to complete study!

In summary, the visa processing is much improved, but more remain to be done. In Japan the problem for Indian scientists was resolved, following an intervention by the scientific community. In the USA, the processing of visa applications for scientists has been streamlined, but for citizens of certain countries it remains a tedious process, sometimes

with unpredictable outcome! The US science community will continue to insist on the development of a national strategy to promote international scientific exchange.

For the time being, IUPAP Commissions are advised to assist their foreign colleagues, bring problems to the attention to their physical societies and to the IUPAP leadership. Conference organizers should issue invitations well in advance, and travelers need to plan ahead and apply 3-4 months before departure, check on interview appointment and processing “wait-times” www.state.gov/travel. If an application is still pending after 30 days, please “register” the application at www.nationalacademies.org/visas. Students traveling outside US or visiting home are advised to schedule visa interview before departure from USA, early during their overseas visit to avoid delays of their return.

Acknowledgements

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Specifically, I have extracted data from the following sources:

- 1) GAO Report on Investigation of Visa Application Process, Feb. 2004/ April 2005.
- 2) Amy Flatten, PHYSICS TODAY, February 2005.
- 3) Findings from the 2005 CGS International Graduate Student Survey, Challenges and Trends in International Graduate Student Admission, Heath Brown, Council of Graduate Schools, April 2005
- 4) Websites: www.state.gov/travel and www.nationalacademies.org/visas